Here is how we calculate the food to microorganism ratio:

The equation for food to microorganism ratio is:

$$\textbf{F:M} = \frac{\underline{\text{Lbs BOD influent}}}{\text{Lbs MLVSS aeration basin}}$$

First we calculate the pounds (lbs) of influent (inf) BOD.

$$\textbf{Lbs of influent BOD} = \frac{\underline{.325 \text{ MGD X } 8.34 \text{ lbs/gal X } 209 \text{ MG/L BOD}}}{566.5 \text{ lbs inf BOD}}$$

Next we calculate the pounds (lbs) mixed liquor volatile suspended solids (MLVSS) in the aeration basin (AB).

$$\textbf{Lbs of MLVSS in the aeration basin} = \frac{\underline{.75 \text{ MG X } 8.34 \text{ X } 1,750 \text{ MGL MLVSS}}}{10,946.25 \text{ lbs MLVSS AB}}$$

Finally we calculate the food to microorganism ratio.

$$\textbf{F:M} = \frac{\underline{566.5 \text{ lbs BOD inf}}}{10,946.25 \text{ lbs MLVSS AB}}$$

$$\textbf{= .051 F/M}$$